METAL WORK PNEUMATIC



# POSITION SENSOR

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# INTRODUCTION

Magnetic position sensors are used for measuring the linear stroke of actuators. The position of the piston is measured without contact and given via a configurable analogue output signal, as voltage (0-10 V) or current (4-20 mA).
Our position sensors are divided into three types: LTS, LTL and LTE.
The LTS position sensors can be used for various product families with strokes up to 256 mm. It is used for ISO 15552 TYPE A and SERIES 3 cylinders, CMPC and ISO 21287 LINER compact cylinders, ELEKTRO ISO 15552 electric cylinders and R3 rotary actuators.
With ISO 15552 TYPE A and ELEKTRO ISO 15552 cylinders, the other two types of position sensors, LTL and LTE, can be used when the stroke exceeds 256 mm (see table).

**LTS**

**LTL**

**LTE**

## RANGE OF APPLICATION OF LTS, LTL AND LTE SENSORS ON ISO 15552 TYPE A CYLINDERS

| Bore | LTS | LTL | LTE |
|---|---|---|---|
| mm | Strokes from 0 to 256 mm | Strokes from 257 to 503 mm | Strokes from 150 to 500 mm |
| 32 | YES | NO | YES |
| 40 | YES | NO | YES |
| 50 | YES | YES | YES |
| 63 | YES | YES | NO |
| 80 | YES | YES | NO |
| 100 | YES | YES | NO |
| 125 | YES | YES | NO |

## NOTES

# LTS POSITION SENSOR



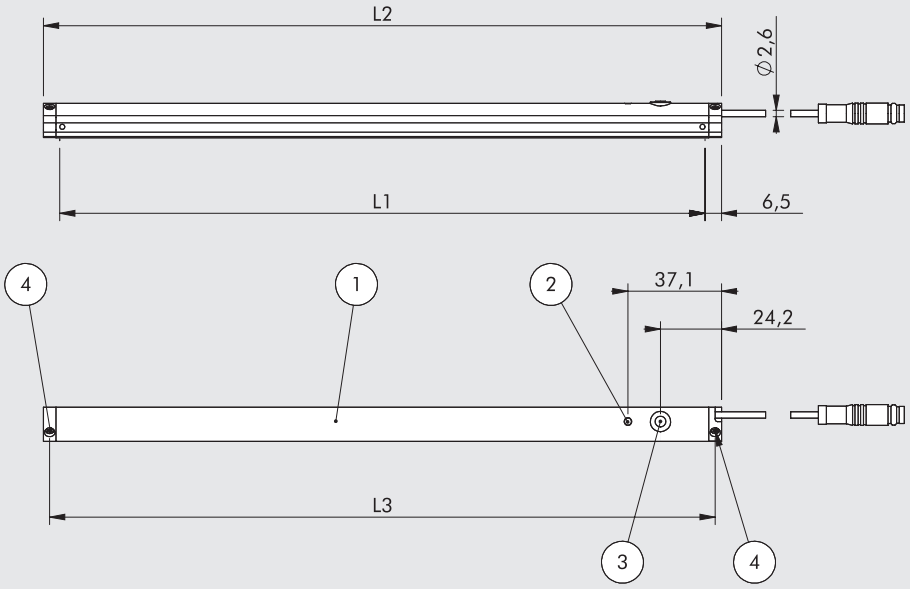
The LTS is a magnetic position sensor for measuring linear strokes of actuators. The position of the piston is measured without contact and given via a configurable analogue output signal, as voltage or current. The body of the LTS is very compact, so it can be used in applications where limited space is available.
This position sensor can measure the strokes of various families of actuators up to 256 mm.
Correct operation requires a magnetic field strength of between 4 and 30 mT.
The measurement range can be regulated accurately using the Teach-in button (zero point and end point). Teach-in can be performed regardless of the polarity of the magnetic field and the position of the sensor. The yellow ON light comes on when the piston is in measuring range.
The position sensor is out of the measuring range when:

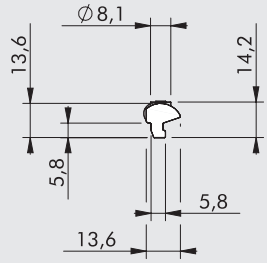
- the yellow light is off; and
- the voltage signal is 11V (range 0-10V) or the current 3 mA (range 4-20 mA).

| TECHNICAL DATA | | |
|---|---|---|
| Measuring length (± 1 mm) | mm | from 0 to 256 |
| Electrical connection | | M8x1 – 4 pin |
| Electromagnetic compatibility in accordance with standard | | EN 60947-5-7 |
| Sample time | ms | 1 |
| IEC 60068-2-6 shock test | | 30 g, 11 ms |
| IEC 60068-2-6 vibration test | | 10 Hz ... 55 Hz, 1 mm |
| Maximum displacement speed | m/s | < 3 |
| Linearity* | mm | 0.3 |
| Resolution | mm | 0.03 % FSR (≥ 0.05 mm) |
| Repeatability | mm | 0.06 % FSR (≥ 0.1 mm) |
| Operating temperature | °C | –20 to +70 |
| Index of protection | | IP 67 |
| Protection class | | III |
| Voltage | V | 15 - 30 |
| Black current (without load) | mA | < 25 |
| Analogue output (voltage) | V | 0 to 10 |
| Out-of-range analogue output | V | 11 |
| Analogue output (current) | mA | 4 to 20 |
| Out-of-range analogue output | mA | 3 |
| Max. load resistance (current output) | Ω | 500 |
| Min. load resistance (voltage output) | Ω | 2000 |
| Polarity inversion protection | | YES |
| Short-circuit protection | | YES |
| Overload protection | | YES |

* In some applications, linearity may be higher than the value indicated.

## DIMENSIONS AND ELECTRICAL CONNECTION

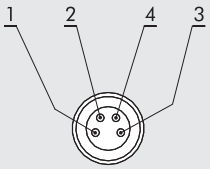



① LTS
② LED (yellow)
③ TEACH-IN button
④ Fixing screw

**L1** = Measuring range
**L2** = Total length
**L3** = Fixing screws centre

| Type | L1 [mm] | L2 [mm] | L3 [mm] |
|---|---|---|---|
| **LTS-032** | 32 | 45 | 40 |
| **LTS-064** | 64 | 77 | 72 |
| **LTS-096** | 96 | 109 | 104 |
| **LTS-128** | 128 | 141 | 136 |
| **LTS-160** | 160 | 173 | 168 |
| **LTS-192** | 192 | 205 | 200 |
| **LTS-224** | 224 | 237 | 232 |
| **LTS-256** | 256 | 269 | 264 |

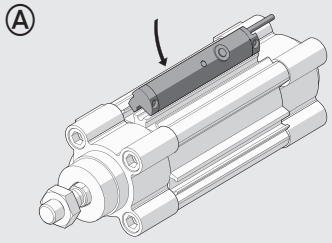


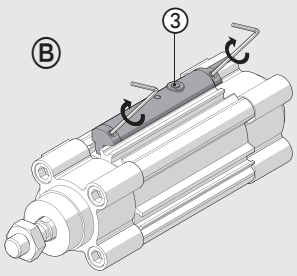

| PIN | Colour | Function |
|---|---|---|
| **1** | Brown | Positive |
| **2** | White | Current output |
| **3** | Blue | Negative |
| **4** | Black | Voltage output |

## FIXING ON THE ACTUATOR AND START-UP

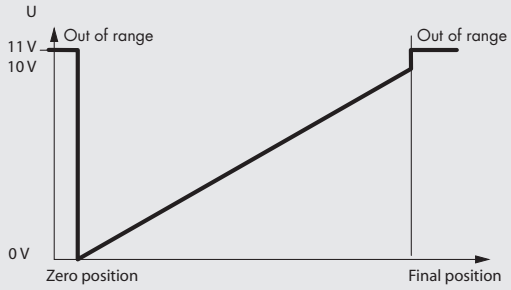
1. Connect the position sensor to the power supply using the M8x1 4-pin connector, wiring the voltage or the current output;
2. Insert the position sensor in one of the T-slots in the actuator (fig. A) and tighten the two screws using the key provided (fig. B);
3. If you wish to determine a specific measuring range, perform the procedure with the Teach-In button ③ (see instruction manual).

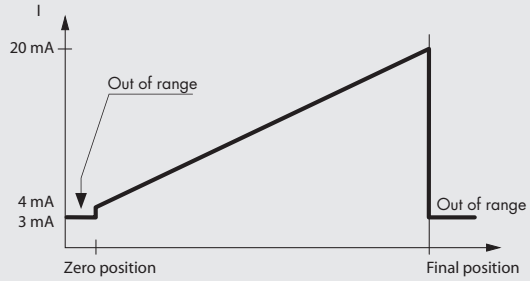
**N.B.** If a measuring range is not set, the maximum range is used automatically.




## GRAPH OF THE VOLTAGE OR CURRENT ANALOGUE OUTPUT SIGNAL VALUE AND THE OUT-OF-RANGE VALUE

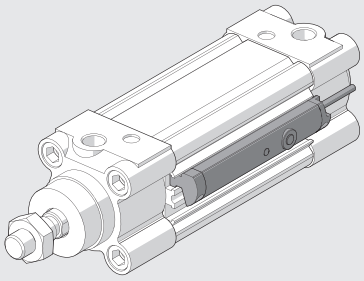


# CHOICE OF POSITION SENSOR BASED ON THE MEASURING STROKE

The tables below show the recommended position sensors model for some families of actuators. For other products it is necessary to determine whether the LTS operates correctly.

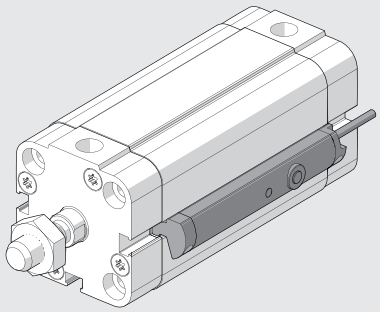
## ISO 15552 TYPE A CYLINDERS – SERIES 3



| Ø 32* - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100 - Ø 125 | |
|---|---|
| **Stroke [mm]** | **Position sensors model** |
| up to 32 | LTS-032 |
| from 33 to 64 | LTS-064 |
| from 65 to 96 | LTS-096 |
| from 97 to 128 | LTS-128 |
| from 129 to 160 | LTS-160 |
| from 161 to 192 | LTS-192 |
| from 193 to 224 | LTS-224 |
| from 225 to 256 | LTS-256 |

* ISO 15552 series 3 cylinders cannot be used for strokes up to 3 mm.

## COMPACT CYLINDERS - SERIES CMPC



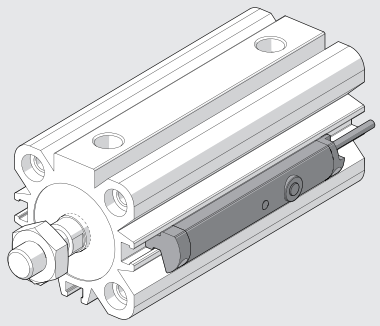
| Ø 12- Ø 16 - Ø 20 | | |
|---|---|---|
| **Stroke [mm]** | **Position sensors model** | **Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.** |
| up to 32 | LTS-032 | - |
| from 34 to 64 | LTS-064 | from 34 to 38 |
| from 66 to 96 | LTS-096 | from 66 to 70 |
| from 98 to 128 | LTS-128 | from 98 to 102 |
| from 130 to 160 | LTS-160 | from 130 to 134 |
| from 162 to 192 | LTS-192 | from 162 to 166 |
| from 194 to 224 | LTS-224 | from 194 to 198 |
| from 226 to 256 | LTS-256 | from 226 to 230 |

The LTS cannot be used with some strokes (e.g. 33 mm).

| Ø 25 | | |
|---|---|---|
| **Stroke [mm]** | **Position sensors model** | **Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly.** |
| up to 32 | LTS-032 | - |
| from 33 to 64 | LTS-064 | from 33 to 37 |
| from 65 to 96 | LTS-096 | from 65 to 69 |
| from 97 to 128 | LTS-128 | from 97 to 101 |
| from 129 to 160 | LTS-160 | from 129 to 133 |
| from 161 to 192 | LTS-192 | from 161 to 165 |
| from 193 to 224 | LTS-224 | from 193 to 197 |
| from 225 to 256 | LTS-256 | from 225 to 229 |

| Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100 | |
|---|---|
| **Stroke [mm]** | **Position sensors model** |
| up to 32 | LTS-032 |
| from 33 to 64 | LTS-064 |
| from 65 to 96 | LTS-096 |
| from 97 to 128 | LTS-128 |
| from 129 to 160 | LTS-160 |
| from 161 to 192 | LTS-192 |
| from 193 to 224 | LTS-224 |
| from 225 to 256 | LTS-256 |

## ISO 21287 COMPACT CYLINDERS – LINER SERIES



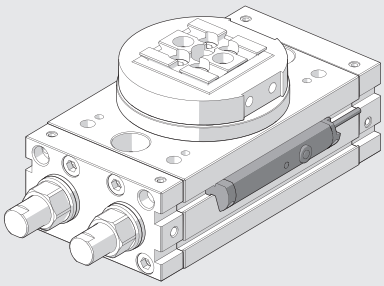
| Ø 20 | | |
|---|---|---|
| Stroke [mm] | Position sensor model | Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly. |
| up to 32 | LTS-032 | - |
| from 35 to 64 | LTS-064 | from 39 to 64 |
| from 67 to 96 | LTS-096 | from 71 to 96 |
| from 99 to 128 | LTS-128 | from 103 to 128 |
| from 131 to 160 | LTS-160 | from 135 to 160 |
| from 163 to 192 | LTS-192 | from 167 to 192 |
| from 195 to 224 | LTS-224 | from 199 to 224 |
| from 227 to 256 | LTS-256 | from 231 to 256 |

The LTS cannot be used with some strokes (e.g. 33 mm).

| Ø 25 | | |
|---|---|---|
| Stroke [mm] | Position sensor model | Strokes for which the LTS projects beyond the cylinder heads, despite being fixed correctly. |
| up to 32 | LTS-032 | - |
| from 33 to 64 | LTS-064 | from 37 to 64 |
| from 65 to 96 | LTS-096 | from 69 to 96 |
| from 97 to 128 | LTS-128 | from 101 to 128 |
| from 129 to 160 | LTS-160 | from 133 to 160 |
| from 161 to 192 | LTS-192 | from 165 to 192 |
| from 193 to 224 | LTS-224 | from 197 to 224 |
| from 225 to 256 | LTS-256 | from 229 to 256 |

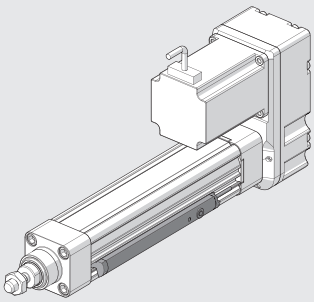
| Ø 32 - Ø 40 - Ø 50 - Ø 63 - Ø 80 - Ø 100 | |
|---|---|
| Stroke [mm] | Position sensor model |
| up to 32 | LTS-032 |
| from 33 to 64 | LTS-064 |
| from 65 to 96 | LTS-096 |
| from 97 to 128 | LTS-128 |
| from 129 to 160 | LTS-160 |
| from 161 to 192 | LTS-192 |
| from 193 to 224 | LTS-224 |
| from 225 to 256 | LTS-256 |

## ROTARY ACTUATORS - SERIES R3



| Bore [mm] | Position sensor model |
|---|---|
| 16 | LTS-64 |
| 20 | LTS-64 |
| 22 | LTS-64 |
| 25 | LTS-64 |
| 30 | LTS-64 |
| 40 | LTS-64 |

## ELECTRIC CYLINDER SERIES ELEKTRO ISO 15552



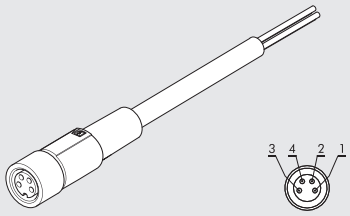
| Ø 32 - Ø 50 - Ø 63 | |
|---|---|
| Bore [mm] | Position sensor model |
| up to 32 | LTS-032 |
| from 33 to 64 | LTS-064 |
| from 65 to 96 | LTS-096 |
| from 97 to 128 | LTS-128 |
| from 129 to 160 | LTS-160 |
| from 161 to 192 | LTS-192 |
| from 193 to 224 | LTS-224 |
| from 225 to 256 | LTS-256 |

## ORDERING CODES

| Code | Description |
|---|---|
| **W0950000470** | LTS-032 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000471** | LTS-064 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000472** | LTS-096 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000473** | LTS-128 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000474** | LTS-160 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000475** | LTS-192 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000476** | LTS-224 position sensor with M8 4-PIN 0.3 m connector |
| **W0950000477** | LTS-256 position sensor with M8 4-PIN 0.3 m connector |

# ACCESSORIES

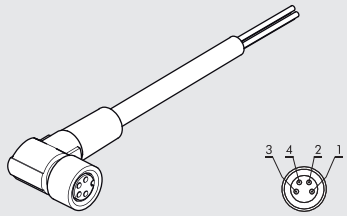
## STRAIGHT M8 CONNECTORS




| Pin | Cable colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| **0240009100** | M8 4-pin connector – female, straight L = 2 m |
| **0240009101** | M8 4-pin connector – female, straight L = 5 m |

## 90° M8 CONNECTORS




| Pin | Cable colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| **0240009102** | M8 4-pin connector – female, 90° angle L = 2 m |
| **0240009103** | M8 4-pin connector – female, 90° angle L = 5 m |

## NOTES

# LTL POSITION SENSOR

The LTL position sensor uses an array of Hall sensors to measure positions without contact, thanks to the presence of a magnet inside the cylinder. It uses a smart algorithm to adapt dynamically to the magnets during operation, so that the output signal is always linear and reproducible. This technology allows the position sensor to adapt dynamically to changes in the intensity of the magnetic field connected with ageing of the magnet and the different operating temperatures.
A magnetic field intensity of between 2 and 15 mT is required for correct operation.
The LTL can be set by means of a TEACH-PAD capacitive button that allows rapid actuation of the position sensor and adaptation to the user's requirements. Just press slightly with the fingers to:

- select an output current (4-20 mA) or output voltage (0-10 V);
- establish the desired measuring range;
- reset the position sensor to the factory setting.

The button is designed to prevent unintentional changes to the parameters.
The position sensor is out of the measuring range when:

- the yellow light is off; and
- the voltage signal is 11V (range 0-10V) or the current 3 mA (range 4-20 mA).

LED1 (operating light) comes on when the piston is in the measuring range:

- yellow on - optimal signal power;
- yellow on and red flashing - signal power not optimal.

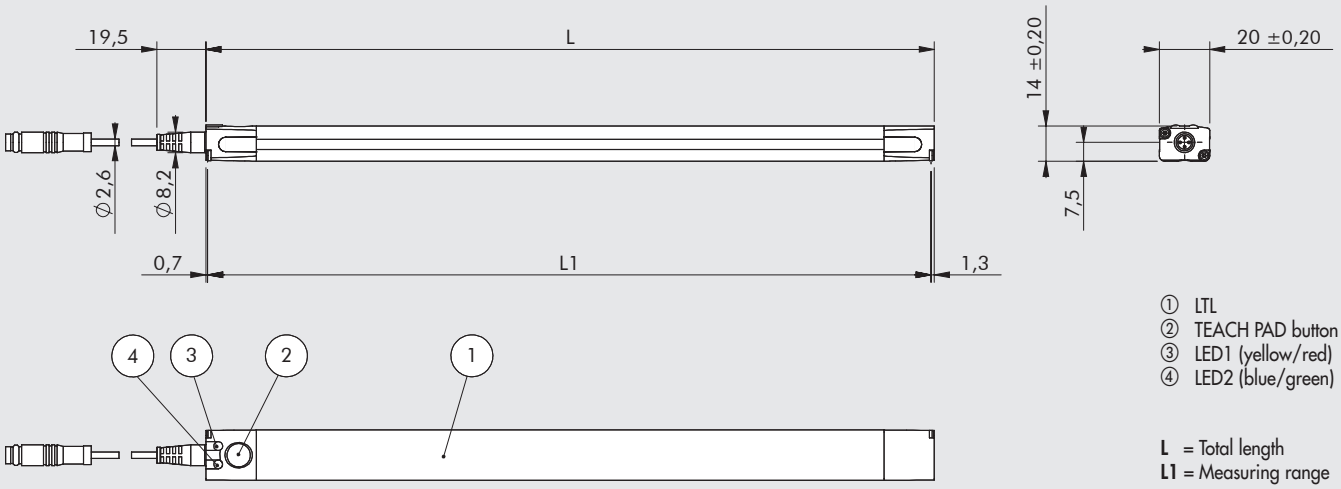
LED2 tells you which analogue output is active:

- green – voltage analogue output;
- blue – current analogue output.

The position sensor is secured by means of brackets near one of the actuator T-slots.
The LTL position sensor is applied to ISO 15552 type A cylinders, and electric cylinders serie ELEKTRO ISO 15552.
For longer strokes please contact our sales department.

| TECHNICAL DATA | | |
|---|---|---|
| Measuring length (± 1 mm) | mm | from 257 to 503 |
| Electrical connection | | M8x1 – 4 pin |
| Electromagnetic compatibility in accordance with standard | | EN 60947-5-7 |
| Sample time | ms | 1.15 |
| IEC 60068-2-6 shock test | | 30 g, 11 ms |
| IEC 60068-2-6 vibration test | | 10 Hz ... 55 Hz, 1 mm |
| Maximum displacement speed | m/s | < 3 |
| Linearity | mm | 0.5 |
| Resolution | mm | 0.03 % FSR (≥ 0.06 mm) |
| Repeatability | mm | 0.06 % FSR (≥ 0.1 mm) |
| Operating temperature | °C | –20 to +70 |
| Index of protection | | IP 65, IP 67 |
| Protection class | | III |
| Voltage | V | 15 to 30 |
| Black current (without load) | mA | < 35 |
| Analogue output (voltage) | V | 0 to 10 |
| Out-of-range analogue output | V | 11 |
| Analogue output (current) | mA | 4 to 20 |
| Out-of-range analogue output | mA | 3 |
| Max. load resistance (current output) | Ω | < 500 |
| Min. load resistance (voltage output) | Ω | > 2000 |
| Polarity inversion protection | | YES |
| Short-circuit protection | | YES |

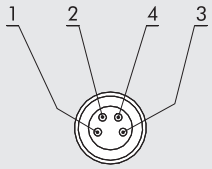
## DIMENSIONS AND ELECTRICAL CONNECTION




① LTL
② TEACH PAD button
③ LED1 (yellow/red)
④ LED2 (blue/green)

**L** = Total length
**L1** = Measuring range

| Type | L [mm] | L1 [mm] |
|---|---|---|
| **LTL-287** | 289 | 287 |
| **LTL-359** | 361 | 359 |
| **LTL-431** | 433 | 431 |
| **LTL-503** | 505 | 503 |



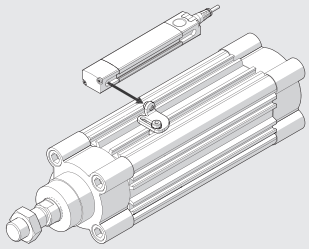

| PIN | Colour | Function |
|---|---|---|
| **1** | Brown | Voltage + |
| **2** | White | Current output |
| **3** | Blue | Voltage - |
| **4** | Black | Voltage output |

## FIXING ON THE ACTUATOR AND START-UP

1. Position the brackets (code W0950000721) in one of the T-slots in the cylinder liner (fig. A);
2. Fix the brackets in the position sensor slot at least 30 mm from the ends of the position sensor (fig. B). The brackets are used to adjust the position along the axis of the piston rod, including perpendicular to the T-slot (fig. C). This allows you to fix the position sensor in as central a position as possible (fig. D);
3. Connect the position sensor to the power supply using the M8x1 4-pin connector, wiring the voltage or the current output;
4. If you wish to determine a specific measuring range, perform the procedure with the Teach pad (②) (see user manual).

**N.B.** If a measuring range is not set, the maximum range is used automatically.

Ⓐ



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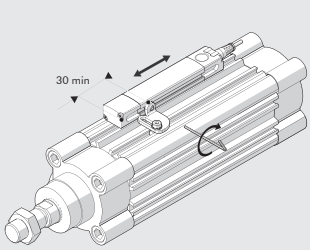


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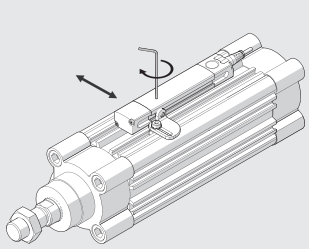

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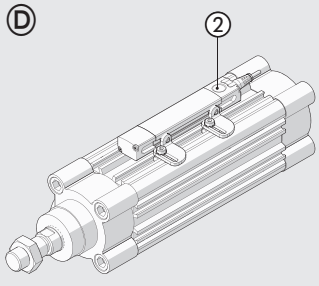
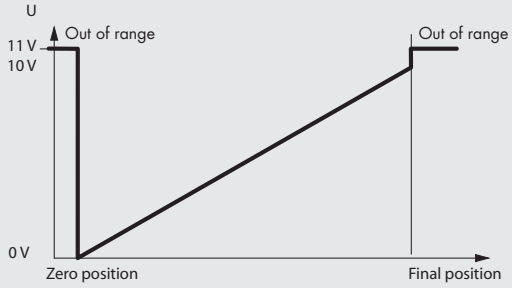
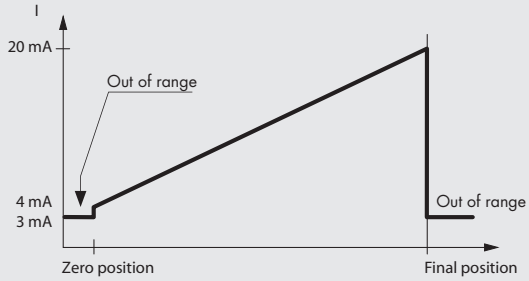


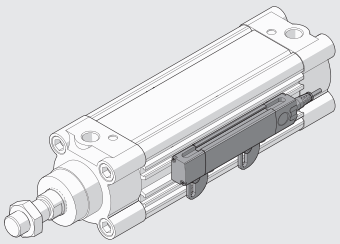

## GRAPH OF THE VOLTAGE OR CURRENT ANALOGUE OUTPUT SIGNAL VALUE AND THE OUT-OF-RANGE VALUE



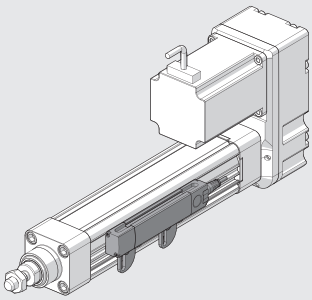
# CHOICE OF POSITION SENSOR BASED ON THE ACTUATOR MEASURING STROKE

## ISO 15552 TYPE A CYLINDERS



| Ø 50 - Ø 63 - Ø 80 - Ø 100 - Ø 125 | |
|---|---|
| **Measuring stroke [mm]** | **Position sensor model** |
| from 255 to 287 | LTL-287 |
| from 288 to 359 | LTL-359 |
| from 360 to 431 | LTL-431 |
| from 432 to 503 | LTL-503 |

## ELECTRIC CYLINDER SERIES ELEKTRO ISO 15552



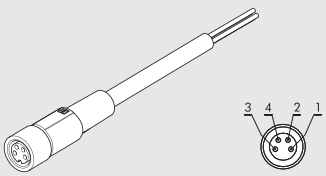
| Ø 32 - Ø 50 - Ø 63 | |
|---|---|
| **Measuring stroke [mm]** | **Position sensor model** |
| from 255 to 287 | LTL-287 |
| from 288 to 359 | LTL-359 |
| from 360 to 431 | LTL-431 |
| from 432 to 503 | LTL-503 |

## ORDERING CODE

| Code | Description |
|---|---|
| **W0950000478** | LTL-287 Position sensor with M8 4-PIN 0.3 m connector |
| **W0950000479** | LTL-359 Position sensor with M8 4-PIN 0.3 m connector |
| **W0950000480** | LTL-431 Position sensor with M8 4-PIN 0.3 m connector |
| **W0950000481** | LTL-503 Position sensor with M8 4-PIN 0.3 m connector |

# ACCESSORIES

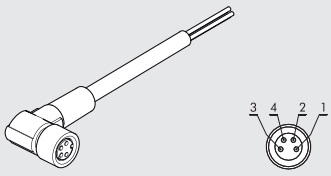
## STRAIGHT M8 CONNECTORS




| Pin | Cable colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| **0240009100** | M8 4-pin connector – female, straight L = 2 m |
| **0240009101** | M8 4-pin connector – female, straight L = 5 m |

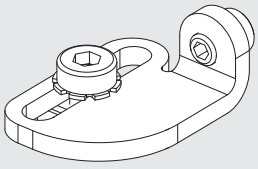
## 90° M8 CONNECTORS




| Pin | Cable colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| **0240009102** | M8 4-pin connector – female, 90° angle L = 2 m |
| **0240009103** | M8 4-pin connector – female, 90° angle L = 5 m |

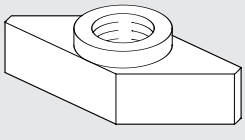
## T-SLOT BRACKET



| Code | Description |
|---|---|
| **W0950000721** | Bracket for mounting LTL on cylinder with T-slot |

Bracket for fixing the LTL position sensor in the T-slot of the actuator.

## SLOTTED FIXING PLATE WITH INSERTION FROM ABOVE



| Code | Description | Weight [g] |
|---|---|---|
| **0950003001** | M4 T-slotted fixing plate | 4 |

Note: Individually packed.
N.B. To be used with the T-slot bracket W0950000721 when the T-slot is not a through one (e.g. in cylinders series ELEKTRO ISO 15552).

# LTE POSITION SENSOR

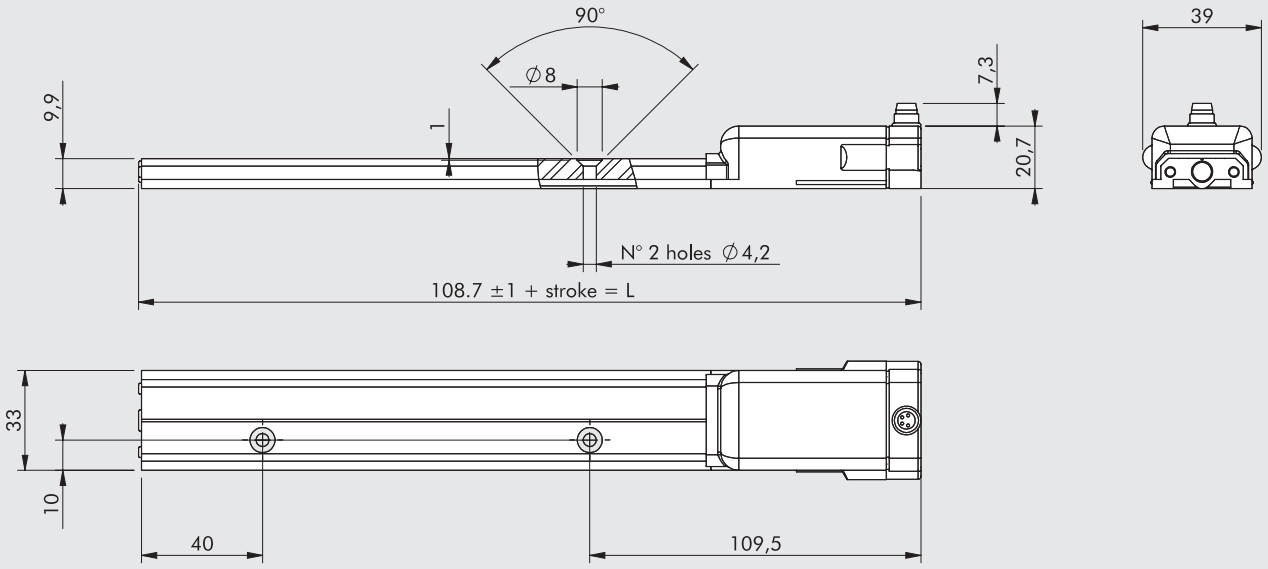


The LTE is a in-line position sensor with an innovative magnetostrictive solution and no electric contact.
The absence of an electric contact on the slide eliminates the problem of wear and guarantees a virtually unlimited life. The position sensor is fixed in one of the sensor slots in the actuator liner by means of two screws. Actuators to which the position sensor is applied are standard and require no adaptation, they just have to be the magnetic version. The position sensor automatically detects the position of the magnets inside the cylinder.
The LTE is applied to ISO 15552 type A cylinders with the same stroke and the measuring length.
For longer strokes please contact our sales department.

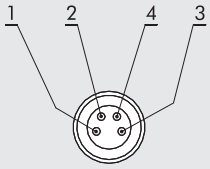
| TECHNICAL DATA | | |
|---|---|---|
| Measuring length | mm | 150 - 200 - 250 - 300 - 350 - 400 - 450 - 500 |
| Electrical connection | | M8x1 – 4 pin |
| Sample time | ms | 1 for measuring lengths up to 600 mm, 1.5 for greater lengths |
| DIN IEC68T2-27 shock test | | 100 g - 11 ms - single stroke |
| DIN IEC68T2-6 vibration test | | 12g / 10 ... 2000 Hz |
| Maximum displacement speed | m/s | ≤ 10 |
| Maximum acceleration | $m/s^2$ | ≤ 100 |
| Resolution | | Endless |
| Linearity* | mm | ≤ ±0.2% f.s. (min ±1 mm) |
| Maximum repeatability | mm | ≤ 0.05 |
| Maximum hysteresis | mm | ≤ 0.2 |
| Operating temperature | °C | 0 to +50 |
| Storage temperature | °C | -40 to +100 |
| Temperature coefficient | | ≤ ±0.01% f.s./°C (min 0.015 mm/°C) |
| Index of protection | | IP 65 |
| Spam | | 9 VDC ± 100 mV max |
| Voltage | V | 24 ± 20% |
| Electrical zero | V | 0.8 |
| Maximum ripple voltage | | 1 Vpp |
| Output current consumption | mA | 35 |
| Output load | kΩ | ≥ 10 |
| Max. output value | V | 12 |
| Alarm output value | V | 10.5 |
| Electrical insulation | V | 50 |
| Polarity inversion protection | | YES |
| Short-circuit protection | | YES |
| Overload protection | | YES |

* In some applications, linearity may be higher than the value indicated.

## DIMENSIONS AND ELECTRICAL CONNECTION




**L** = Total length




| PIN | Colour | Function |
|---|---|---|
| **1** | Brown | Voltage + |
| **2** | White | Output |
| **3** | Blue | Voltage - |
| **4** | Black | Screen |

## FIXING ON THE ACTUATOR AND START-UP

The position sensor can be fixed on the cylinder using either two M4 T-slot plates for vertical insertion + 2 M4x14 hexagon socket countersunk head screws (code 0950003003) or two blocks + 2 M4x14 hexagon socket countersunk head screws (code 0950003050). If the cylinder head projects from the liner, position one or more spacers.
The installation procedure is as follows:

1. Insert either the fixing blocks or the plates in the T-slots in the cylinder (fig. A);
2. Mount the position sensor on the cylinder, aligning the reference mark a) with the end of the liner (Fig. A). Do up the screws loosely and retract the piston rod completely (Fig. B).
3. Connect the voltage or current analogue output, power on the position sensor and wait at least 1 second for the magnet orientation to be recognized.
4. Slide the position sensor along until the zero value reading is 0.8V.
5. Tighten the two M4x14 screws on the securing element inserted in the T-slot (Fig. C).

The end of the position sensor may project a certain amount from the end of the cylinder head, depending on the type of cylinder.

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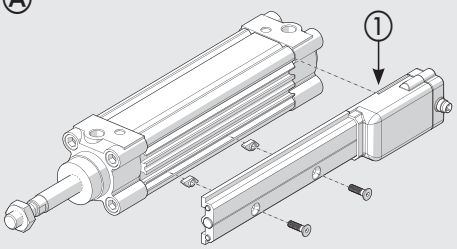
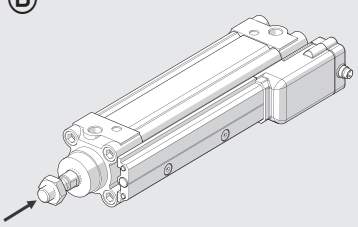
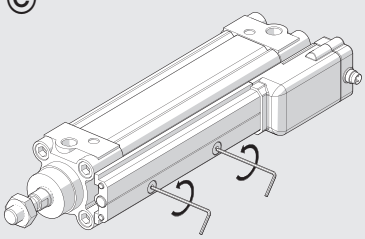


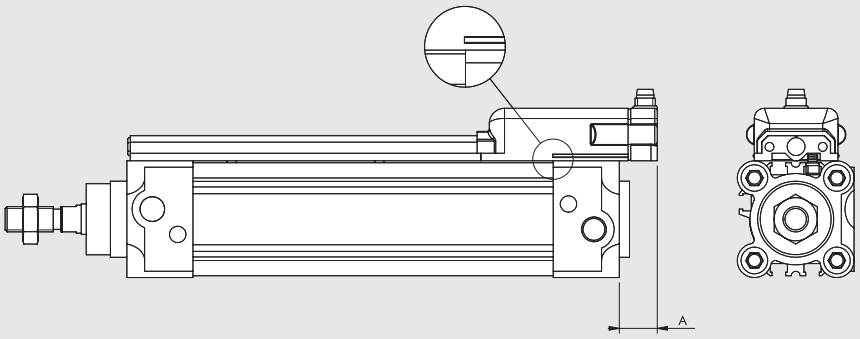

Ⓑ



Ⓒ



## PROJECTION OF POSITION SENSOR ON ISO 15552 TYPE A CYLINDERS




| Bore [mm] | A [mm] |
|---|---|
| 32 | ~ 16 |
| 40 | ~ 12 |
| 50 | ~ 12 |

N.B. Projection by a zero value equal to 0.8V

# CHOICE OF POSITION SENSOR BASED ON THE ACTUATOR MEASURING STROKE

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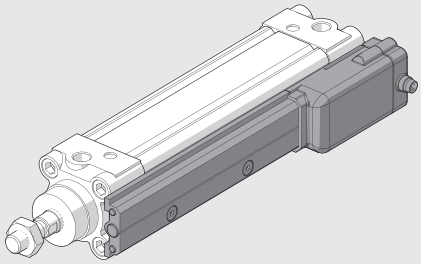


| Ø 32 - Ø 40 - Ø 50 | |
|---|---|
| Measuring stroke [mm] | Position sensor model |
| 150 | LTE-150 |
| 200 | LTE-200 |
| 250 | LTE-250 |
| 300 | LTE-300 |
| 350 | LTE-350 |
| 400 | LTE-400 |
| 450 | LTE-450 |
| 500 | LTE-500 |

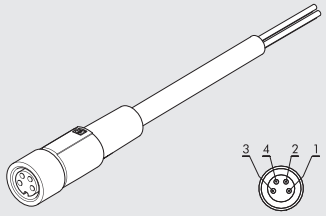
## ORDERING CODE

| Code | Description Metal Work | Description GEFRAN |
|---|---|---|
| **W0950000482** | LTE-150 position sensor | ONPP-A-S-0150-N |
| **W0950000483** | LTE-200 position sensor | ONPP-A-S-0200-N |
| **W0950000484** | LTE-250 position sensor | ONPP-A-S-0250-N |
| **W0950000485** | LTE-300 position sensor | ONPP-A-S-0300-N |
| **W0950000486** | LTE-350 position sensor | ONPP-A-S-0350-N |
| **W0950000487** | LTE-400 position sensor | ONPP-A-S-0400-N |
| **W0950000488** | LTE-450 position sensor | ONPP-A-S-0450-N |
| **W0950000489** | LTE-500 position sensor | ONPP-A-S-0500-N |

## NOTES

# ACCESSORIES

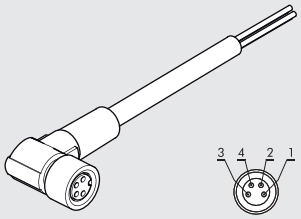
## STRAIGHT M8 CONNECTORS




| Pin | Cable colour |
|---|---|
| 1 | Brown |
| 2 | White |
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| 0240009100 | M8 4-pin connector – female, straight L = 2 m |
| 0240009101 | M8 4-pin connector – female, straight L = 5 m |

## 90° M8 CONNECTORS




| Pin | Cable colour |
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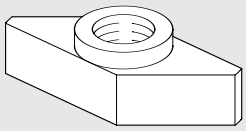
| 3 | Blue |
| 4 | Black |

| Code | Description |
|---|---|
| 0240009102 | M8 4-pin connector – female, 90° angle L = 2 m |
| 0240009103 | M8 4-pin connector – female, 90° angle L = 5 m |

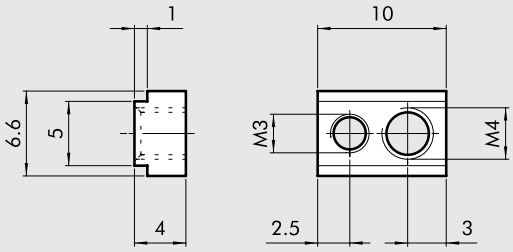
## SLOTTED FIXING PLATE WITH INSERTION FROM ABOVE



| Code | Description | Weight [g] |
|---|---|---|
| 0950003003 | M4 T-slotted fixing plate | 4 |

Note: Note: 2 items plus 2 M4x14 screws per pack

## SLOTTED FIXING PLATE WITH LATERAL INSERTION




| Code | Description | Weight [g] |
|---|---|---|
| 0950003050 | Fixing block | 5 |

Note: Note: 2 items plus 2 M4x14 screws per pack

## NOTES